

REMARKS

The present Amendment is in response to the Office Action mailed June 24, 2004 in the above-identified application. Enclosed herewith is a Petition requesting a three-month extension of time for resetting the deadline for responding to the Office Action from September 24, 2004 to and including December 24, 2004.

The Examiner rejected claims 1-12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,039,763 to Shelokov. Referring to FIGS. 1A-1C and 2A-2C thereof, Shelokov discloses an artificial disk including a first plate 1 and a second plate 10. Referring to FIGS. 1A-1C, the first plate 1 has a substantially flat superior surface 2 and an opposing articulating inferior surface 3 having two laterally juxtaposed convex portions 4, 5. Referring to FIGS. 2A-2C, the second plate 10 includes a substantially flat inferior surface 11 and an articulating superior surface 12 having two laterally juxtaposed concave portions 13, 14. Referring to FIGS. 3A-3B, as the upper and lower plates 21, 22 articulate along their articulating surfaces 25, 26 the first plate 21 will move in the direction indicated by the arrow B from the home position depicted in FIG. 3A to a second position depicted in FIG. 3B. In the home position, the plates 21, 22, share a common center of rotation (23a,b). However, when the upper plate 21 is articulated to a second position as depicted in FIG. 3B, the instant centers of rotation 23a, 23b are no longer coincident. Therefore, when a patient using the present device bends in a forward or backward manner, the instant centers of rotation 23a, 23b will be displaced away from each other in an anteroposterior fashion, i.e., there will be an anteroposterior translation of the instant center of rotation 23b with respect to the instant center of rotation 23a.

FIGS. 4A and 4B of Shelokov depict partial cross-sectional rear, or posterior, elevation views of an artificial spinal disc 30 having a first superior plate 31 and a second

inferior plate 32. The first superior plate 31 has a bicondylar articulating surface that articulates with a bimodal concave articulating surface 34 of the second plate 32. The plates 31, 32 are depicted in a home or neutral position. However, when the first plate 31 is translated laterally along the arrow T with respect to the second plate 32, the first plate 31 will tilt slightly with respect to the second plate 32 and the instant centers of rotation 35a, 35b will be displaced from one another. Thus, the Shelokov artificial spinal disc provides first and second articulating surfaces that are adapted to provide a changing center of rotation when the articulating surfaces are translated or articulated with respect to one another in a lateral-to-lateral fashion.

Claim 1 of the present application is unanticipated by Shelokov because the cited reference neither discloses nor suggests an apparatus including a first member and a second member, "wherein the first member has a first center of rotation that remains below said articulating surfaces during flexion/extension in the anterior-posterior plane of the spinal column and a second center of rotation that remains above the articulation surfaces during lateral bending in the lateral plane of the spinal column." Claims 2-12 are unanticipated, *inter alia*, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

The Examiner rejected claims 1-8 and 10-12 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0024462 to Ferree et al. Claim 1 is unanticipated by Ferree because the cited reference neither discloses nor suggests an apparatus including a first member

having a first articulation surface that is defined at least by a concave arc having a radius of curvature A about a first axis substantially perpendicular to an anterior-posterior plane of the spinal column, and by a convex arc having a radius of curvature B about a first axis substantially perpendicular to a lateral plane of the spinal column; and a second member . . . having a second articulation surface that is

defined at least by a convex arc having a radius of curvature C about a second axis substantially perpendicular to the anterior-posterior plane of the spinal column, and by a concave arc having a radius of curvature D about a second axis substantially perpendicular to the lateral plane of the spinal column, said radius of curvature A being greater than said radius of curvature C and said radius of curvature B being less than said radius of curvature D.

Claims 2-8 and 10-12 are unanticipated, *inter alia*, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,039,763 to Shelokov. In response, Applicants respectfully assert that claim 13 is unobvious by virtue of its dependence from claim 1, which is unobvious over Shelokov for the reasons set forth above.

The Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0024462 to Ferree et al. In response, Applicants respectfully assert that claim 9 is unobvious over Ferree, *inter alia*, by virtue of its dependence from claim 1, which is patentable over Ferree for the reasons set forth above.

The Examiner rejected claims 14-17 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,039,763 to Shelokov or U.S. Patent Application Publication No. 2004/0024462 to Ferree et al. in view of U.S. Patent No. 6,228,118 to Gordon et al. In response, Applicants respectfully assert that claims 14-17 are patentable over Shelokov or Ferree in view of Gordon by virtue of their dependence from claim 1, which is patentable for the reasons set forth above. Gordon does not overcome the deficiencies noted above in Shelokov and Ferree.

Applicants have amended the claims in the present application in order to obtain prompt allowance of the case. Applicants respectfully note that they intend to pursue claims

in related or continuing applications that are of a broader scope than the claims currently pending in this application.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that she telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which she might have.

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Docket No.: SPINE 3.0-455 CONT III

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

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